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Worldwide Report

ENVIRONMENTAL QUALITY

No. 350



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DEVELOPING COUNTRIES' USE OF AGRICULTURAL CHEMICALS RAISES CONCERN

Helsinki HELSINGIN SANOMAT in Finnish 4 Apr 82 p 23

[Article by Antti Vahtera: "Developing Countries Are Being Poisoned"]

[Text] The use of insect and plant poisons is restricted in industrial nations.

The multinational companies need new market areas.

Now, dangerous poisons are being dumped into Third World fields.

About 25,000 people die annually in developing countries because of insecticides and other powerful pesticides. There are many times more sick people, according to one estimate a half a million.

These UN estimates are of necessity taken at random. Nevertheless, they indisputably demonstrate that the use of insecticides in the developing countries is alarmingly widespread.

The big chemical companies began to take over new market areas when the wealthy nations' own pesticide markets shrank or in part closed down after the mid-1960's.

In her work, "Silent Spring," published in 1962, Rachel Carson demonstrated the many negative effects of strong poisons on the natural environment and in the end on people. The book raised a violent storm of opinion and finally forced many industrial nations to order bans or restrictions on powerful pesticides. These constituted a harsh blow to the big chemical industry firms, the biggest of which are multinational.

Then the developing country markets came to the rescue. Their capacity to accept [these chemicals] soon proved to be almost limitless, namely these developing countries which were struggling for economic growth and industrialization at any cost. Their model was Western, particularly American efficiency and the negative side effects of industrialization were ignored.

The multinational companies could use for their own benefit imperfections and loopholes in the legislative system. For example, in the United States the law does not prohibit the manufacture and exporting of poisons whose use in the country of manufacture is banned.

Poisons Spread Like Epidemics

To find out about the extent and nature of the "neoexporting" of poisons, the editors of the American magazine *NEWSDAY* investigated the use of poisons for a year in several Latin- American and Asian countries. As a result of this investigation, the magazine published an extensive four-part series of articles. In it they vehemently attack the multinational firms' "sowing of poisons."

NEWSDAY primarily investigated the export and use of pesticides produced by American multinational firms. The magazine demonstrated, however, that European chemical industry multinational firms also engage in the same kind of business activity. For example, the FRG, France, England and Japan sell large amounts to the developing countries. *NEWSDAY* reached the conclusion that the widespread use of poisons endangers people and upsets the natural ecology in all the countries it investigated. The poisons have spread in many places like epidemics.

One area *NEWSDAY* investigated was the Tolima Valley in Colombia where cotton, sesame and rice are grown.

A local hospital doctor said that he had treated dozens of children who have harelips and cleft palates. Women living in the valley have had an exceptionally high incidence of miscarriages.

Low-flying planes spray insecticides in the Tolima Valley. Their chief target is the valley's cotton and rice fields. But flyers do not shut off the spray-jet nozzles when flying from one field to the next. The poison spreads in all directions — over canals where laundry and dishes are washed as well as over small dwellings, orchards and even the little hospital. When housewives hear the planes coming, they cover their wells and rush the children and livestock to shelter.

The most unprotected of all are the poor farmhands working in the fields, who are repeatedly exposed to the chemical fog spread by the planes. They are also often ordered to spray the fields themselves. Under a scorching sun, they spray poisons from cannisters attached to their backs without any protective devices. Often they are shrouded in a cloud of poison or the poison runs down their backs from the cannister.

After the spraying, the empty cannisters are washed in boiling water. This kills the bacteria, but it does not neutralize the poisons. Then the cannisters are used to collect rainwater, since they do not have many pots and pans. Farmhands often mix poisons with their bare hands and occasionally blow open clogged hoses [with their mouths].

Many of these poisons are banned in the United States and other Western countries. Despite the fact that they are so strong, manufacturers often recommend that different poisons be mixed into a "bomb," as the mixture is called in Tolima. Local merchants estimate that farmers use twice as much poison as experts recommend.

In some of the poison packages there is a brief warning in Spanish. This is, however, meaningless since the farmers cannot read. Many of the packages are not marked with the universal symbol for poisonous substances, the skull and crossbones.

So, many have become ill from these poisons. The local doctor said that over a period of 25 years he had treated 7,000 cases of poisoning in his little hospital, which serves 25,000 people.

About 30 farm workers die of poisoning annually. In 1975 there were 70 miscarriages that were probably due to these poisons in the Tolima Valley.

Price of Brazil's Economic Miracle

Colombia is, however, one of the rare developing countries that react critically to powerful pesticides. Officials recommend the "integration" of pesticides, a plan in which biological methods occupy a significant place. The use of some poisons, like 2,4,5-T and phosvel, is banned in Colombia.

In many developing countries the situation is even worse than in Colombia. One example is Brazil where the military government in the 1970's decided to start industrializing the country at any cost. Officials made it plain to foreign investors that projects dangerous to the environment were welcome. Businessmen did not have to worry about troublesome issues which environmental activists publicly raised in other developing countries.

The generals' open-handedness accelerated the phenomenon referred to as the "Brazilian economic miracle," which also has its other side: how officials react to poisons used in agriculture.

There are about 8,000 known poison brands in Brazil. According to the Brazilian Agricultural Research Institute, the use of poisons rose from 40,000 tons a year in 1970 to 160,000 in 1980. According to *NEWSDAY* investigators, "chemicals are used haphazardly, almost entirely without official supervision, and they cause major damage to the ecology."

In Bolivia, Comarapa's little community economy collapsed when farmers started to use insecticides in their fields at the prompting of produce marketers. Up until 1965 they had controlled insects with traditional methods, particularly crop rotation.

Three years later, an insect pest resistant to the poisons developed and the farmers' tomato harvest was ruined. Poison dealers offered chemicals that were stronger than before, but they did not help. The insects remained alive and the farmers' fields did not recover.

Similar cases are known to exist in developing countries in Africa and Asia. For example, the world's biggest homogeneous plantation, the Gezira Cotton Plantation in the Sudan, is a poison-competition arena for the multinational companies. Last year alone, 3.5 million liters of poison were sold for plantation use. Many workers have become ill or died and animals have died in droves.

Even the United Nations is involved in the poisoning through its Food and Agriculture Organization (FAO). With its 40-year, \$2-million program, it has been trying to destroy the tsetse fly, which causes sleeping sickness, and turn the tropical African rain forests into grazing grounds for cattle. The experts as well have severely criticized the program, which was begun in 1975.

Ordinarily only sudden, dramatic cases of poisoning stemming from a fatal mistake give rise to general attention. This happened in Egypt in 1971 when phosvel killed peasants and about 1,000 water buffaloes. In 1972 about 6,500 Egyptians became ill from methyl mercury, which is used to protect grain kernels.

In 1976 in Pakistan about 2,900 people who did not know how to properly use malathion became ill. Some of them mixed it with their bare hands and six people died.

Insects Resist Poisons

The most dangerous thing about isolated cases of poisoning is, however, the sneaky effect of insecticides on the environment and humans. The poisons often persist in the environment for a decade or two. These poisons move up the food chain and finally accumulate in humans.

In the end insecticides and plant poisons have the opposite effect of what was intended. Not only do they kill insects' natural enemies; they also give rise to resistant insect strains. According to official statistics, their number has sharply increased. In 1965 only 18 resistant insect pest strains were known to exist, in 1968 they already numbered 228 and in 1977 fully 364. Included among them is also the malaria mosquito, which has once again brought the scourge of malaria to many developing countries.

The multinational companies nevertheless continue to export poisons to the developing countries without paying the slightest attention to bans and restrictions on their use in the industrial nations.

They can use different detours and loopholes in the law to their advantage.

A good example of this is the American firm of Velsicol which manufactures chemicals called phosvels. In 1976 symptoms often leading to strokes were noticed among workers at the Velsicol plant in Bayport, Texas. The local population was aroused and the company had to close the plant.

Nevertheless, Velsicol continued to sell phosvels abroad after the fuss was raised over the poisonings at the Texas plant. In 1978 it sent Costa Rica three boatloads of poisons originating in subsidiary companies in Panama and Mexico. Large quantities of phosvels were sold in Indonesia, at least last year.

From 1971 to 1976 about 6 million tons of phosvels and other banned insecticides were shipped abroad as U.S. foreign aid. This "aid," however, had to be ended because of the protests of American environmental protection organizations.

The phosvel scandal aroused so much attention abroad as well that some developing countries were also aroused. Thus Colombia banned the use of phosvel in 1977. The Philippines, which forced Velsicol to ship a load that had arrived in that country back to the United States, did the same thing.

While the importing of dangerous insecticides is opposed more than it was before in many developing countries, these countries are somewhat helpless in the face of the marketing tactics of the multinational companies. The company often manufactures banned chemicals in its home country and ships them to a plant it has itself founded in the developing country. There the pesticide is finally manufactured and then exported to other developing countries, provided with a new brand name.

The companies advertise their poison on the radio, in the newspapers and large-scale outdoors advertising in the developing countries.

Poison Exports Are Big Business

In many developing countries the companies have their own factories. As an attracter of foreign investments, Brazil once again heads the list. Shell has invested from \$20 to \$30 million in new plants abroad, the Dow Chemicals Company has its own plant which manufactures 2,4-D and Swiss firms are engaged in a joint project. Bayer, which is the world's biggest manufacturer of pesticides, also has its own plants in Brazil.

India, Malaysia and Indonesia also manufacture products banned in the industrial nations. For example, DDT is manufactured in India and Malaysia.

U.S. law also favors pesticide exporters. Manufacturers can export poisons if they are intended "for export only." The companies do not even have to reveal what substances the poisons contain. Unregistered pesticides can be exported without testing.

Poison exports are really big business. It is estimated that the 19 multinational companies that control developing country markets annually export at least 45 million kg of insecticides, the manufacture of which is banned in their home countries. The American firm of Union Carbide exported \$645 million (about 2.9 billion marks) worth of poisons last year to Latin America alone and obtained \$122 million in profits for itself.

However, representatives of the multinationals believe that the effect of the pesticides is largely positive and many of them regard themselves as friends of the developing countries. They also feel that the United States -- or other industrial nations -- should not force its values and regulations on them. The developing countries should themselves be allowed to decide what attitude to assume toward dangerous products.

Critics say that in the final analysis the developing country consumer is completely at the mercy of these poisons. Corrupt politicians in cooperation with unscrupulous multinational firms decide on them. They have founded a worldwide insecticide "supermarket" which by no means tries to satisfy the needs of the

peoples of the developing countries. Critics charge that in part it serves the developing countries' own upper class and in part — and even more so — the consumers of the wealthy nations.

Probably over half, in Central America as much as 70 percent, of all insecticides are used in the developing countries as export varieties that find their way to European, American and Japanese consumers.

Local cultivation has disappeared in the face of the big plantations. Their owners often work in the pay of the multinational companies. The plantations have increased their harvests, but have at the same time led the whole farm economy off in an oblique direction. The so-called green revolution has also in part speeded up the process. The experimental grain varieties developed to inspire it are particularly susceptible to plant diseases and require large doses of insecticides.

The increased use of insecticides not only threatens millions of people in the developing countries, but also those consumers in wealthy countries who eat fruit or grain imported from the developing countries. Particularly in the United States, alarming amounts of poison have been found in imported foods.

In their work "Circle of Poison," David Weir and Mark Shapiro trace the cycle of poisons manufactured in the United States, sold abroad and brought back to the United States in foods. Kepone, an American-made insecticide that causes damage to the nervous system, has been found in Guatemalan bananas. American-made aldrin, which cannot be used in the United States to protect grain, has been found in coffee beans imported from Costa Rica.

Difficulties with Poison Cases in the United States

Last year U.S. officials had to put a stop to all beef imports from Mexico, El Salvador and Guatemala because of overly large traces of poison. A batch of peppers sent to American supermarkets was found to contain fully 29 times the maximum trace of poison allowed. According to the U.S. Food and Agriculture Administration, 10 percent of the foods imported into the country contain overly large traces of poison.

The U.S. Environmental Protection Agency (EPA) has too small a staff to handle poison cases. The EPA usually does not want to or cannot punish violations, nor do its occasionally imposed small fines, usually less than \$5,000, shake the multinational companies much either. The EPA cannot force a manufacturer to stop production of some poison either if it is intended for use abroad.

Nowadays, President Ronald Reagan's policy also hampers EPA activity. As the new president, he immediately rescinded his predecessor, Jimmy Carter's, restrictions on exports of dangerous products. According to these, a company that intended to export a product banned in the United States had to get a special permit from the Department of Commerce.

Reagan is just roughing out his policy, but according to advance information it favors American industry more than before.

The new policy not only reverses the Carter government initiatives, but also eliminates the requirement that export countries must be warned. Greater responsibility than before for protective measures falls to the developing countries themselves.

American environmental protectionists are all stirred up over the preparations for influencing existing policy and are branding this a serious setback in the campaign against the destruction wrought by the poisons. They stress the fact that even the previous stricter requirements were quite inadequate.

The multinational companies are also concerned over the situation. Many of them are afraid "their image" may be damaged; that they will begin to be regarded as a gang of bandits who in the name of their own business profits are endangering the health of millions of people.

Despite their pangs of conscience, the companies nevertheless fight legislation that interferes with competition and restricts business profits.

Finland Returns Mainly Fruit

About 2,000 tons a year of foods imported into Finland are returned because of traces of poison. They are mainly apples, pears and citrus fruits. The amount is, however, only 1 or 2 percent of overall imports and 4 percent of inspected foods.

Last year 300 lots of bananas imported from Central America into Finland were examined in the Customs Office laboratory. Insecticides, or "hard pesticides": DDT, lindane and dieldrin, were found in only three lots. However, the amounts were clearly under the permitted level.

"Generally 50 percent of the bananas are examined," M.A. Arto Kiviranta of the Customs Office laboratory told us. The examination is chiefly concerned with a mold preventative called thiapentazole, which is not a hard pesticide. The amounts of thiapentazole traces observed have been under the maximum permitted level.

Spot checks are made of coffee beans. A few years ago an extensive examination of raw coffee was made during which nothing alarming was revealed.

At the most, 50 percent of permitted DDT levels has been found in grapes and plums imported into Finland.

11,466
CSO: 5000/2097

DEVELOPMENTS IN WEST AUSTRALIA FAVOR FOREST PRESERVATION

Industry Logging Limits

Perth THE WEST AUSTRALIAN in English 9 Mar 82 p 19

[Text]

The WA timber industry has accepted the Forests Department's multiple-use proposal for conservation in the karri forest as a blueprint for its own future in the lower South-West.

Timber production will be limited to 49.7 per cent of the total karri belt, to be cut over a 100-year period and progressively regenerated.

The remaining area has been set aside for reserves, recreation, catchment protection and scientific purposes.

The chairman of the Forest Products Association, Mr E. Sprengel, said yesterday that the industry disagreed with those who opposed the department's proposal without considering the effect that a loss of employment would have on people who lived and worked in the forests.

"We believe that the principles discussed by the department and the conclusions reached have been distorted by an obsession with the Shannon Basin and unrealistic claims that it should be preserved completely from cutting," he said.

"Forty per cent of the Shannon Basin is already preserved from cutting and this includes 60 per cent of its total virgin karri.

"The Shannon has long been a major source of timber and for more than 20 years, up to 1970, supplied the Shannon River mill, one of the biggest in the State."

Mr Sprengel said that the Shannon Basin was only part of the karri environment.

An area bigger than the Shannon and immediately east of it was already a flora, fauna and landscape priority area in which cutting was banned.

WILDERNESS

This area showed the maximum possible range of ecotypes within the karri belt. With the proposed D'Entrecasteaux Park it was a significantly better example of wilderness than the Shannon.

"The karri forest has always been subjected to pressures from those with extremist views," Mr Sprengel said.

"As recently as the 1950s the pressure came from those who wanted to see it cleared for agriculture, a concept that would have been disastrous to the whole of the South-West had it been accepted.

"Considerable Inroads into forested areas have already been made."

It would be equally disastrous if the forest

was set aside for a single use, Mr Sprengel said.

Without management it would be subject to natural decline and fires would threaten adjacent communities.

The vitality of the forests was aided by industry removing waste and residues. This also improved fire protection.

The multiple-use concept supplied a balance in which production forestry played a vital part.

Timber production was the economic base that supported the other management objectives of recreation, conservation and science.

Mr Sprengel said that sawlog production in WA's hardwood forests had been heavily reduced

ed since 1976. By 1987, production levels would have fallen 44 per cent in 11 years.

This reduction would provide for a continuous supply of sawlogs and allow the community to gradually adjust to the changes.

It was preferable to the preservationists's proposal to close the sawmills, he said.

Closure would mean a considerable loss of timber and other wood products and a big loss of jobs, not only in the industry but at all levels in the South-West community.

"Talk of alternative jobs in the recreation and tourist industries comes out of a dream

not yet realised," Mr Sprengel said.

He said that conservation of the South-West forests was probably more important to the timber industry than to anyone else. Production in the karri forest was reaching the point where it would equal the rate at which the timber was growing.

Only a fraction of the forest would be cut in any one year and most of it would be in various stages of regrowth. This would apply only to that part of the karri belt where cutting was permitted.

In the national parks, fauna, flora, road and stream reserves the natural forest would remain, subject only to management control.

Drop in Hardwood Cutting

Perth THE WEST AUSTRALIAN in English 11 Mar 82 p 3

[Text]

Six small timber mills may have to stop operating under a plan to reduce the hardwood sawlog cut in WA forests over the next five years.

The plan provides that by then the hardwood sawlog cut will be down by 61,000 cubic metres to 762,000 cubic metres a year.

A Forests Department working plan approved by the Government provides for this reduction to be partly offset by an increase in pine production of 44,000 cubic metres to 108,000 cubic metres a year in the same period.

The 177-page document, released yesterday, said that the reduction in the allowable annual hardwood cut would result in six small mills ceasing operations based on general-purpose sawlogs from State forest and crown land.

The mills could continue operating on this material only if private mill log resources could be found.

The mills were not named.

Plans for continued restructuring of the industry included:

- Amalgamating sawmills into fewer units of economic size.

- Varying permit and licence conditions to provide the management flexibility needed for multiple-use forestry.

- Transferring part of the work-force to re-manufacturing activities and into the developing pine-processing industry that would be established in the South-West, but not necessarily at present hardwood industry centres.

The document said that towards the end of the five-year period, new timber ventures were expected to be introduced to enable the use of small logs from forest clearing or thinning procedures.

This would add between 30,000 and 50,000 cubic metres to the amount of hardwood available and result in more efficient use of forest products and better forest management.

Policies

The Premier, Mr O'Connor, said yesterday that the new five-year work-

ing plan ensured that WA forest management closely followed world conservation policies.

It updated previous multiple-use management policy and provisionally allocated management priorities over the whole forest.

Management priority areas (MPAs) gave priority to different forest uses while allowing for secondary uses that did not conflict with the priority use.

MPAs were established for flora, fauna and landscape, wood production, water production, protection of catchments and of general forest values, scientific study, education and recreation.

Those for flora, fauna and landscape covered nearly one-fifth of State forest.

Mr O'Connor said that

the State's softwood plantation programme would be maintained at 3000 hectares a year. It was hoped that private plantations would add another 500ha a year.

The policy was designed to achieve self-sufficiency in timber early next century.

Hardwood planting would continue for many purposes, including such things as maintaining future supplies of poles for the State Energy Commission.

The document said that pressure to use State forest for other uses was now so great that its use for public utilities should be restricted only to those considered essential.

The plan aims at minimising the area of State forest cleared for mining.

CSO: 5000/7529

ABATTOIR DUMPS WASTE INTO SEA WHERE SHARK KILLED SWIMMER

Canberra THE AUSTRALIAN in English 9 Mar 82 p 1

[Article by David Hancock]

[Text]

AN ABATTOIR is allowed to pump 1.4 million litres of effluent a week into the sea off Byron Bay, NSW, near where a young surfer was attacked and killed by a shark on Sunday.

The abattoir's effluent pumping is officially approved by the State Pollution Control Commission from which the State Government called for a report yesterday.

It is the only abattoir in the State which is permitted to pump treated effluent from slaughtered cattle directly into the sea.

On Sunday, Martin Ford, 20, of Brisbane, was taken by a white pointer shark as he surfed at Tallows Beach, near Byron Bay headland. He died of shock and loss of blood before reaching hospital.

The abattoir, part of the F. J. Walker string of abattoirs in Queensland, NSW and the Australian Capital Territory, is licensed to pump up to 1.4 million litres of effluent into the sea each week. It is allowed a maximum flow of 20,000 litres a minute.

The submarine outlet for the effluent is 500m offshore from Byron Bay and 600m south of the main surfing beach.

Yesterday divers, fishermen and surfers claimed that the effluent was a prime reason

the waters off Byron Bay were infested with sharks.

A commercial diver, Mr Ron Nicholson, who has dived and fished the area for 20 years, said the effluent attracted hundreds of sharks.

He said many sharks, including dangerous white pointers and bronze whalers, lingered at Byron Bay because of the odor given off by effluent pumped out by the abattoir.

"There have been four incidents in the past 30 months involving sharks, not to mention the numerous undocumented incidents where sharks have attacked surfboards," Mr Nicholson said yesterday.

He said divers had urged Byron Shire Council to close the pipeline several times in the past 10 years, but had been ignored.

Yesterday the health officer of Byron Shire, Mr Jim Fanning, said the State Pollution Control Commission was responsible for the abattoir and the council could not control effluent emissions.

The abattoir slaughters up to 300 head of cattle a day.

An abattoir spokesman, Mr Ron Barnes, said a treatment process removed all blood, bone and solid offal before the effluent is pumped out.

He said the emissions conformed to licensing arrangements with the State Pollution Control Commission.

TELECOM BANS PCP PRESERVATIVE ON TELEPHONE POLES

Melbourne THE AGE in English 9 Mar 82 p 15

[Article by Kate Legge]

[Text]

Telecom has banned the use of a toxic wood preserving chemical on telephone poles following recent reports of its cancer-causing properties.

A document prepared by the United States Environment Protection Agency claims that the chemical Penpachlorophenol, known as PCP, poses risks of cancer, birth defects and other adverse reproductive effects under certain conditions.

The ACTU's occupational health and safety unit issued a health hazard alert last week calling on unions with members who are exposed to PCP to demand the immediate suspension of its use.

The head of the unit, Mr John Mathews, said: "There are now restrictions on the use of PCP in Victoria." The alert refers to the evidence of toxicological experiments on animals and warns that PCP must be viewed as a presumptive cancer risk in humans.

Telecom's public relations manager, Mr Brian Luscombe, said yesterday that Telecom had been monitoring overseas studies on the chemical for the past 18 months. "In the interests of safe working conditions we have told contractors to stop using PCP as a preserving agent for the cross arms on telephone poles," he said.

PCP is a widely-used wood preserving agent and wood pest control agent as well as a weed

killer and alime and algae control agent used in the paper, paperboard, leather, paint and adhesive industries.

The union alert reports that PCP is known to affect humans if it is inhaled, swallowed, or absorbed through the skin. There are no controls on the maximum level of toxic contaminants contained in the chemical.

A member of the Latrobe University microbiology department, Mr Don McPhee, said that a shortage of toxicologists working in Australia had led to inadequate controls on the industrial use of some toxic chemicals.

"In the past some chemicals manufactured overseas have not been rigorously checked before being introduced into this country. People tend to rely heavily on information from overseas."

Deaths

Mr McPhee said there has been considerable concern in Queensland since the death of workers in contact with PCP has been related to the toxic contaminants of a herbicide used by plantation workers during the 1950s.

The American EPA has proposed restrictions on the use of PCP following the release of its latest research document. It has recommended classifications for restricted use, limitations on some methods of application, and an outright ban on some uses, such as for wood intended for interior use and wood intended for uses that may result in the contamination of animals, food or water.

The union alert also stresses the danger of creosote, a chemical which is produced in Australia as an alternative wood preservative to PCP.

Reference to information supplied by the American EPA shows that "in addition to causing cancer, exposure to creosote can lead to irritation of the skin and eyes and possible sensitisation to light".

The head of the State Health Commission's industrial health department, Dr Milne, said that although wood preservatives were widely used in industry, "if the hazards are known people generally use toxic chemicals carefully".

The most controversial section of the union alert criticises authorities such as the Timber Preservers' Association of Australia for failing to educate the public on hazards of using PCP and creosote.

The alert quotes from a pamphlet issued early this year by one of the TPAA's member companies. "The pamphlet makes the following statement 'For the past decade all aspects of creosote use have been scrutinised in detail by the US EPA and other relevant US Government authorities. The conclusion was that it is a safe material and its continued use is economically and strategically necessary'."

Subject to comments from ACTU affiliates, recommendations for union actions against the use of these toxic chemicals will eventually be adopted as policy by the ACTU executive.

URBAN DECAY ANALYZED

Karachi DAWN in English 28 Mar 82 p 12

[Article by A. T. Chaudhri: "Where Men Decay"]

[Text]

THREE out of every ten Pakistanis live in cities which are growing bulky and slummy, year after year, and do not conform to any recognisable pattern or planning strategy.

One of their common characteristics is that they are cities and slums rolled into one. They have undertones of modernity and overtones of primitiveness. They have contradictory skylines and silhouettes - ornate and ugly, exciting and drab. That adds to the miasma of joy and suffering in the urban life.

What are these 20 and odd cities, with population of 50,000 and beyond, like? To have a bird's eyeview of the urban panorama, one must begin with the highcheeked queen that is Karachi. Once the cleanest city east of Suez, its population has jumped from less than 0.5 million before Independence to over 5 million now. With its runaway expansion, this biggest metropolis boasts of its inflated workforce, gilt-edged trade and gold-rimmed industry. But the queer juxtaposition of its mini-skyscrapers against dingy hovels, posh localities and stinking suburbs, glamorous patches and old-world environs of the fishing village of "Curachi" - all this demoralises its 'denizens' leading an almost sub-human life.

This nightmarish aspect of urban living which reminds one of Goldsmith's lament over upstart towns -

"where wealth accumulates and men decay" - is partly true of all cities in Pakistan. For instance, the cultural metropolis, Lahore, is part feudal, part factory-hooter. It has an oriental cast with its minarets, monuments and Mughal gardens as well as western streaks of modernity. But with its ancient walled city and new low-lying areas it presents the spectacle of a dilapidated, moth-eaten town.

Likewise, Peshawar, near the famous Khyber Pass, is part dramatic, part barbaric, part trumpet, part dirge. So are Rawalpindi, the old garrison town, Faisalabad, Multan, Hyderabad and Quetta - all living in the past and looking to the future. The one exception is the federal capital of Islamabad, which flaunts its bureaucratic arrogance and modern flourishes with its long, broad avenues, big awesome mansions and lush green wild parks. But it is a city apart - a city with all geography, no history.

Unlike the capital, most of the cities are problem-ridden. For, the urban population has shot up from 9.9 per cent, in 1950; 16.3 per cent, in 1960; 22 per cent, in 1970, to 28.2 per cent in 1981. This is owing mainly to the hectic exodus of rural multitudes into urban 'heavens' in search of new pastures. Every year two hundred thousand people cross the line. Since the population is growing, rather galloping, at the rate of 2.98 per cent - one of the highest birth rates in the world - the cities

have to feed new mouths ad nauseam. No wonder, their socio-economic problems become more and more acute.

These multiple problems stem indirectly from the deepening rural crisis - displacement of labour by mechanisation, transfer of capital from the villages to the cities by absentee landlords and shrinking of economic opportunities for landless labour. Then, the gulf between rural and urban life is widening, due to the absence of basic amenities - education, health, communications and agriculture-based projects - in the countryside. Hence the ceaseless trek to the old and new towns which are bursting at the seams.

So intense is the pressure on urban life that men are packed like sardines in the suburban fringes of towns. Some 40 per cent of the new towns do not have clean drinking water. Barely 34 per cent of their populace has access to piped sewage and disposal facilities. The housing situation is bleak. According to the Fifth Plan benchmark estimates, there is a backlog of two million housing units. The urban dwellers need 90,000 units a year, but less than 35,000 are put up. Of these 70 per cent have hardly two rooms and five to seven persons are squeezed into them. Only 20 per cent houses have proper bath-rooms. What is worse, the spiralling prices of land, brick and mortar, cement and iron

make house-building an elusive dream for the low-income groups who get much less out of life than they put into it to subsist at the poverty line.

The urban environment adversely affects the indigent citizens and rural migrants. Though Pakistan's density of population is 105 persons a square kilometre - it is lower than that of other Asian countries - the congestion and overcrowding in cities ruin many lives. Unhygienic conditions also breed epidemics. Again anonymity and strains of urban life make sub-calibre folk drift into the underworld of crime and vice. The bright lights, amusements, novelties, bargains, thrills and excitements lead some people astray so accidents, robberies, rapes, murders and other crimes add to the seamy side of urban living. In fact, there is more crime per capita in Pakistan's cities, more mental disorders, more social unrest, more political ferment and more cultural topsy-turvydom.

What is the way out of the disturbing inventory of urban maladjustments? First, the migration from villages has to be drastically reduced, by spreading a network of small and cottage industries and launching labour-intensive projects in the rural sectors. Secondly, absentee landlords have to be screened and the tillers of soil turned into peasant proprietors. Introduction of cooperatives and provision of basic amenities - more schools and dispensaries, more water and power, and better communications and market facilities - should help lower the barriers between rural and urban life and stem the tide of migration.

More important, cities have to be given a face-lift by vigorous slum-clearing, and streamlining of sewerage, water supply, health services and transportation. There is also a clamant need for changes in the urban planning strategy. Elected municipal bodies have to be set up, free from bureaucratic meddling.

These must be allowed to raise adequate funds to tone up civic life. If sensible town-planning schemes are devised, if a ban is imposed on the vertical expansion of cities and construction of luxury houses and if scarce resources are put to an effective use under a National Housing Policy things would begin to look up.

Time is also ripe for a National Environment Policy, for no nation can neglect its environment without sabotaging its own future. Pakistan is the oldest cradle of well-planned cities, as the ruins of Moenjodaro bear out. It can still make its cities the nurseries of urban virtues.

CONCERN OVER WATER CONTAMINATION IN KARACHI

Karachi DAWN in English 20 Apr 82 p 9

[Text]

WATER-BORNE diseases are among the greatest health hazards in the country — throughout the developing world as a matter of fact — but one sometimes wonders whether villagers, who are supposedly more threatened, are really not better off than the citizens of Karachi. KMC occasionally carries out laboratory testing of water samples and, invariably, the results are alarming enough for water to be regarded with the greatest suspicion. The results of the latest survey have just been released by KMC. Out of 535 water samples collected by KMC, laboratory tests showed that 239 were contaminated and unfit for human consumption. This works out to 44 per cent. An earlier survey had found that out of 443 samples 186 were contaminated, or about 42 per cent of the total. While official agencies glibly recommend that water should be boiled before consumption, this is easier said than done. In the first place is the fact that the majority of the population cannot really afford to boil water. Besides this, even those who do boil drinking water cannot escape contamination in other ways, or on occasions where boiled water is not available, such as when travelling or eating out. It should be pointed out that coincident

with KMC's report about water contamination are reports that hepatitis, one important source of which is water, has increased in a dramatic way in the city. It hardly needs to be mentioned that serious epidemics, the primary cause of which is contaminated water, are common in Karachi.

No really satisfactory answer has been given by KDA or any other agency to why water should be contaminated to such an extent. Investigation by competent and impartial experts is needed to determine whether this is caused by improper purification and filtration, in which case methods should be revised. One theory is that water is contaminated in the transmission system, such as when drains or sewers are in close proximity to water pipelines and, because of defects in the latter, manage to seep in. If this is so, then there is need to change or repair pipelines after all Karachiites pay heavy taxes and, besides, the economic cost of illness to the Government and the people is far more than what changing or repairing pipelines would cost. Another point at which water could be contaminated is in the overhead or underground storage tanks in houses, or in pipelines in houses. This is, in most cases, an individual problem, but even then if

a scientific survey is undertaken and the results released, the public will be made aware as to how serious the problem is. If, for instance, it is found that in half the cases water is contaminated within a house, and not during transmission, then people will sit up and take notice, and try to put into effect preventive measures. Another dimension of the same problem concerns public places: hotels and restaurants, educational institutions, mosques, even public offices and libraries, and manufactures such as ice. These should also be required by law to maintain their water storage facilities in hygienic condition. There is a law regarding food which is largely ignored even by the so-called posh eating places and hotels — and occasional inspection is carried out by health inspectors. It is doubtful, though, whether this inspection extends to physical examination of water storage tanks and laboratory testing of water samples. This is unfortunate, since in many cases, because our food is cooked to such an extent as to eliminate the possibility of contamination, the drinking water is likely to be more hazardous than food. The case for a law regarding public places other than eating houses is self-evident and requires no explanation.

PAKISTAN

BRIEFS

WATER SAMPLES FOUND CONTAMINATED--KMC Health Department collected 443 water samples from different parts of the city during March out of which 186 were found contaminated. A spokesman of Health Department said the Water Management Board had been requested to examine the pipelines which may have been leaking causing contamination and to take steps to remove the faults. The spokesman denied reports of gastro-enteritis but admitted "a few cases of dehydration and loose motions among some children." [Text] [Karachi DAWN in English 7 Apr 82 p 14]

CSO: 5000/5727

ADOPTION OF ENVIRONMENTAL PROTECTION LAWS URGED

Hanoi LUAT HOC in Vietnamese No 4, Oct-Dec 81 pp 25-28, 44

[Article by Tran Trong Huu: "The Scientific and Technological Revolution and the Problem of Writing Laws To Protect the Natural Environment in Our Country"]

[Text] 1. In the work of building socialism and defending the fatherland, science and technology play an extremely important role. The party and state have always asserted: of the three revolutions, the scientific-technological revolution is the key revolution. Recently, the Political Bureau resolution on the science and technology policy again asserted: "In our country today, science and technology are an extremely strong force accelerating socialist construction and the defense of the fatherland, thereby making a tremendous contribution to our winning victory over poverty and backwardness and advancing socialism to total victory in our country."

In recent years, under the leadership of the party and state, the scientific and technological revolution in our country has recorded noteworthy achievements. The vigorous application of scientific and technological advances in production, everyday life and the defense of the nation has yielded tremendous benefits for developing the economy, raising the standard of living and defending the fatherland. The new advances in industry, agriculture, forestry, communications-transportation, national defense and so forth have been closely linked to the scientific and technological advances brought about by the scientific-technological revolution. For example, in agriculture, as a result of the active application of scientific and technological achievements over the past 10 years, we have recorded significant results and brought about changes and leaps forward in crop and livestock yields and output. As a result of applying scientific-technological advances, we have acquired large capabilities and favorable conditions for thoroughly developing, on an increasingly large scale, our arable land, forests, water resources, mines and so forth, which are rich natural resources that are extremely important in socialist construction in our country, a country that is advancing from small-scale production to large-scale socialist production without experiencing the stage of capitalist development.

However, it is clear that, besides the tremendous benefits that have resulted, the application of scientific and technological advances at an increasingly rapid

rate is having increasingly harmful effects upon production and upon the health and life of man on an increasingly large scale. These harmful effects are most evident in the fact that our strong and profound impact upon nature has gradually disrupted the ecological balance between man and nature, and this balance cannot be restored by nature itself. Here, the normal relationships between man and nature in which man is a part of nature have been disrupted.

Today, we all know that the increasing use of chemical fertilizers, growth regulating hormones, herbicides, insecticides and pesticides, in addition to raising crop yields, also have harmful effects, such as causing the soil to become dry and caked, polluting the soil and killing more than a few non-harmful creatures. The present serious destruction of forests in our country (1) has been and is causing tremendous harm and incalculable consequences in many areas. In the process of socialist industrialization, thousands of industrial enterprises of all types have been constructed and gone into production. The solid and liquid wastes generated by these enterprises each day will, if not treated, pollute the air and water sources and cause more than a small amount of harm to production and the life of the people. As a result of applying science and technology, the ability to mine and quickly process large quantities of minerals has raised many problems that must be resolved regarding the treatment of solid wastes, air pollution and water pollution.(2) Other forms of pollution, such as noise pollution, radiation, radioactivity and so forth, are also causing more than a small amount of harm that has not been detected or fully calculated by us. The burning of forests, indiscriminate hunting and so forth have caused an increasing decline in the number of birds and wild animals and some species face the threat of becoming extinct or are already extinct.(3) The destruction of the natural environment in our country by the weapons of the U.S. imperialists (chemical weapons, radioactive weapons, biological weapons and so forth) continues to be a serious aftereffect of the war.(4)

The situation presented above faces us with a pressing problem that must be resolved: together with exploiting nature, we must preserve and restore sources of natural resources and protect the surrounding natural environment for the sake of the interests not only of today's generation, but of future generations as well.

Under the conditions of rapidly applying scientific and technological advances on an increasingly large-scale as is the case today, the relationship between society and nature has undergone truly large changes. Whereas, in the past, man only knew how to exploit and take from nature everything of benefit to himself and returned nothing to nature whatsoever, today, the problem we face is that man must, besides exploiting nature, also preserve and restore nature, help nature to overcome the harm caused by man, harm that nature itself cannot overcome.

Of course, only in our socialist society, only with our socialist state can this task of an epochal nature be carried out in the best possible manner. Because, in contrast to socialist society, in our society the contradiction between the need to rapidly develop production forces and the need to protect nature, protect the environment is not a contradiction of an antagonistic nature. Our state not only has all the bases and conditions needed to make decisions designed to exploit and

utilize each natural resource--which are the constituent components of the surrounding natural environment--in the most reasonable manner, but also fully plans and implements the measures needed to stop and correct the harm caused by the application of scientific and technological advances in the course of utilizing the natural environment upon the production, life and health of the people. Our party and state have always correctly defined and established the relationship between using nature and protecting nature, between man and nature in the course of the development of society for the sake of our interests and happiness today and the interests and happiness of our progeny.

This is concretely and vividly evident in the fact that, today, especially under the conditions of the scientific-technological revolution, protecting nature (using, preserving and restoring nature) has become one of the important functions of our socialist state.

To fulfill this function, our state employs one of its very effective tools, the law. By means of laws, with their different forms and degrees of regulation, our state regulates the exploitation, use and protection of nature with a view toward supporting the development of the economy, culture and national defense and improving the living conditions of the people. This regulation by means of law is most evident in the fact that the state has established strict regulations governing the methods and principles involved in the exploitation and use of nature and the business practices that involve the reciprocal relationships between man and nature and the surrounding natural environment and insures the implementation of these regulations by means of its state power.

Articles 19, 20 and 36 as well as other articles of our country's Constitution (1960) laid the most important and basic legal foundation for regulation by means of law of the protection of this surrounding natural environment. In particular, Article 36 of the Constitution states: "All state agencies, enterprises, cooperatives, units of the people's armed forces and citizens have the obligation of implementing the policy on protecting, transforming and restoring sources of natural resources and protecting and improving the environment."

2. Using and protecting nature (the surrounding natural environment)--which are two organically linked forms of activity of man--are truly problems of life itself, problems that arise objectively, problems which mankind must face and resolve in the course of his development. We cannot ignore or refuse to resolve these problems because their cause lies immediately within and is closely linked to the process of our impact upon nature, to the development of social production forces, to the application of scientific and technological advances and the perfection of production technologies, to the growth of the population, etc. And, the purposes of this effort to protect nature are to maintain and insure the reasonable use of natural resources, to provide man with the best possible environment in which to live by insuring ecological unity and balance between man and nature.

For this reason, protecting nature (the surrounding natural environment) is a matter of routine necessity in each and every case in which man has an impact upon nature for the sake of his own interests. Under the conditions of the

scientific-technological revolution, this objective necessity has become even more urgent. Of course, in every stage of the revolution and period in the history of the development of our socialist society, the tasks and the specifics involved in protecting nature are defined differently by our party and state.

Our state's laws in the field of protecting nature have, until now, been primarily directed toward those natural entities of most important significance, such as the land, water, forests, mines, etc. Numerous legal documents have been promulgated regarding these entities of nature. It can be said that these are some of the most important laws in effect. Article 19 of the new Constitution stipulates that the state (all the people) exercises absolute ownership of natural resources--the factors of the environment--such as arable land, forests and mountains, rivers and lakes, mines, resources within the earth, in the ocean waters and on the continental shelf, etc. Article 20 of the Constitution defines the most important principles underlying the use, management and improvement of the soil. Council of Ministers' resolution number 125-CP dated 28 June 1971 on strengthening the management of cropland, Council of Ministers' decision dated 1 July 1980 on unifying the management of cropland and strengthening the management of cropland throughout the country, Premier's directive number 15/TTg dated 11 February 1964 on combating erosion, retaining soil, retaining fertility, retaining water and so forth have played a large role in exploiting, using and protecting arable land to support the development of the economy and everyday life in the recent past. As regards the exploitation and protection of forests and forest resources, there are such laws as the law on the protection of the forests dated 6 September 1972, Council of Ministers' resolution number 183-CP dated 25 September 1966 on afforestation, decree number 221-CP dated 29 December 1961 on preventing and fighting forest fires, Provisional Revolutionary Council of Ministers' circular number 24-TT/75 dated 20 September 1975 on protecting and restoring the forests, Council of Ministers' decree number 101-CP dated 21 May 1973 on people's forest inspections, etc. The exploitation and protection of plant and animal life, especially rare plant and animal life, are regulated in such documents as Premier's directive number 134-TTg dated 21 June 1960 on prohibiting the shooting of elephants, Council of Ministers' decree number 39-CP dated 5 April 1963 which promulgated the provisional statutes on hunting and trapping forest birds and animals, Premier's decision number 41-TTg which defines areas in which hunting is prohibited, etc. In the fields of the management and use of water, mines and so forth, our state has also promulgated a number of legal documents.

The provisions of the laws mentioned above and other laws that have been promulgated lay a very important, initial foundation for laws governing the use, preservation, transformation and restoration of sources of natural resources and the protection of the environment (that is, laws protecting nature or laws protecting the surrounding natural environment). Generally speaking, these laws have had a positive impact upon the reasonable use, transformation, restoration and conservation of arable land, forests, mines, water and so forth, which are the very important factors, the very important constituent elements of nature, of the natural environment. Recently, the law has begun to give attention to the struggle to stop, limit and eliminate pollution, such as pollution of the land, water pollution and air pollution, and protect rare animals and plants.

However, from an overall point of view and, in particular, in view of the new requirements, we see that our country's laws on protecting nature (the surrounding environment) still has many shortcomings.

At present, we do not have a unified viewpoint concerning protecting nature. For this reason, our present laws on the protection of nature do not form a system and, in many cases, are even contradictory. To date, we only have a few legal documents regulating the use of certain natural entities (primarily the land, forests and so forth) as objects of labor, objects of business; we do not have one general legal document concerning the matters related to protecting nature (the surrounding environment).

Another shortcoming is that all of our legal documents on protecting nature are below the level of laws (the majority of them being decisions, circulars, directives, etc.).

Finally, if viewed from the perspective of protecting nature (the surrounding environment) under the conditions of the present scientific and technological revolution, we see that there are either no regulations or inadequate regulations in more than a few fields. For example, there are no regulations or inadequate regulations regarding protecting ecological systems, restoring natural resources or restoring the ecological systems that were destroyed by the war (especially as a result of the chemical poisons sprayed by the United States and the haphazard exploitation of natural resources); matters regarding land, water and air pollution; the protection of animals and plants, especially rare species; the organization of the effort to manage the protection of nature; matters regarding legal responsibility for violations of the laws on the protection of nature, etc.

3. In the present stage of building socialism and protecting the socialist fatherland, using and preserving nature and protecting the environment have become an important and pressing task. In a speech at the 4th Congress of the Party, Vo Nguyen Giap asserted: "Today, as we enter the stage of accelerating the industrialization of the country, this issue must become one of our foremost concerns because the life of our entire nation for many centuries to come will be affected by what we do today..."

Therefore, improving the laws on protecting nature in order to help perform the task of protecting nature and the environment in the best possible manner is a pressing demand. The question we face is: how can our present laws on protecting nature be strengthened and perfected?

To begin with, we maintain that protecting nature (the surrounding natural environment) includes measures for protecting the individual components of nature as well as measures concerning the use, transformation and restoration of these components. Our state must clearly define these measures. They should include: protecting arable land, water, the bowels of the earth and the animal and plant worlds; using these entities of nature in a reasonable, scientifically based manner; keeping the air and water pure and unpolluted; insuring the restoration of natural resources, the environment, etc.

State management of the effort to protect nature is the most vivid manifestation of organizing the performance of this function. Article 8 of the law on the organization of the Council of Ministers states: the Council of Ministers has the responsibility of "deciding policies, regulations and measures that orient the efforts of the various sectors and levels toward exploiting and using each potential of the country in a reasonable manner" and "implements policies on protecting, transforming and restoring natural resources and protecting and improving the environment."

Because the law is the tool used by the state to fulfill its functions and tasks, to organize and manage society and, as a result, to competently support the management of the state, the law must be perfected and strengthened on the basis of the specifics and requirements of management. Therefore, to implement and insure the implementation of the tasks faced in the state's management of the effort to protect nature, laws on the protection of nature must be written in the form of a system and be constantly improved, must become a sector of law on the protection of nature (the surrounding natural environment) within our country's system of socialist law.

In order to perform this task, it is necessary to resolve two organically related problems: drafting general laws on the protection of nature and drafting specific laws on the protection of nature.

Nature (the surrounding environment) consists of the entire material world outside and surrounding the society of man. In actuality, however, the matter of protecting nature is not related to all the components of nature, but only to those components of nature upon which the life of man is dependent, components whose condition is dependent upon the behavior (method of exploitation) of man. Each component of nature (natural entity) toward which regulatory efforts are directed has its own special characteristics; therefore, attention must be given to these characteristics when amending the law. These components can be divided into four types: types that must be protected (animals); types that must be preserved and nourished in the process of their use (soil); types that are totally destroyed in the process of their exploitation (mines); and types that must be protected from pollution and becoming unusable (water). Therefore, as regards the use and protection of each of these entities of nature, it is necessary to have separate laws, have a separate legal system suited to the characteristics of each. In other words, in order to regulate the protection of nature (the social relationships arising in the use, transformation, restoration and protection of the entities of nature) in a reasonable and effective manner, it is necessary to have separate laws, such as laws on the use and protection of arable land, forests, water and mines, laws on the protection of the air, on the use and protection of the animal world, etc.

On the other hand, it must be realized that these entities of nature regulated by separate laws, although they have different characteristics, are organically related to one another, are the components of a unified system and are inseparable. For this reason, laws on the protection of the individual entities of nature must be established as components of a more general, broader system, the system of

laws on the protection of nature, in general. The best would be a code of law: the law on the protection of the surrounding natural environment. This code of law would define the most basic principles and resolve the most general problems in the use and protection of nature.

The law on the protection of nature and all of the separate laws on the protection of nature, once established on the basis of the systems viewpoint presented above, will create a system of law on the protection of nature, create a unified legal sector within our country dealing with the protection of nature. This would also be the first step in strengthening the system of socialist law in the field of protecting the natural environment in our country at this time.

FOOTNOTES

1. In 1945, our country had 9 million hectares of rich and average forests; in 1979, it had only 2.5 million hectares; Pham Van Dot, NHAN DAN Newspaper, 28 November 1980.
2. For example, according to investigative data compiled by the Hanoi Epidemiological Hygiene Institute, from 1969 to 1971, there were approximately 50 types of pollutants, 10 of which were frequently encountered and exceeded permissible limits. They included lead, benzene and carbon monoxide pollutants, the concentration of which was high at a number of production installations, dust and SO₂ (as of 1980, at only a number of its main centers, the energy sector was generating about 600,000 tons of dust and other pollutants [Dao Ngoc Phong, "Environmental Pollution"; Science and Technology Publishing House, 1979]).
3. See: Hoang Dien: "The Forest Birds and Animals--Economic Resources"; Truong Kha: "Te Giac: S.O.S.," QUAN DOI NHAN DAN Newspaper, 19 September 1981.
4. Dao Ngoc Phong: "Environmental Pollution," p 116, also see: NHAN DAN Newspaper, 25 November 1981.

7809

CSO: 5000/5716

ENVIRONMENTAL DETERIORATION AFFECTING CLIMATE

Santiago EL MERCURIO in Spanish 28 Mar 82 p C1

[Text] The climate in several municipalities in Greater Santiago, especially the temperatures and the rainfall pattern, has been changing since 1945 as a result of pollution, the best index of which is the presence of a large dirty cloud in the sky.

This was established in the study "Deterioration of the Environment in the Municipalities of Greater Santiago," done by researchers at the University of Santiago, which was presented by Prof Sergio Bravo Fuentes at the Geography and History Congress being held at the Diego Portales building.

Professor Bravo indicated that at the present time they are planning a study and evaluation of the tendencies and changes of the atmospheric variables: air temperatures, relative humidity, atmospheric pressure, wind (both speed and direction), solar radiation, precipitation, and cloudiness.

He said that measurement and study of those variables will make it possible to confirm the gradual and systematic deterioration of the environment and the change in the natural microclimate of Greater Santiago: Quinta Normal, Las Condes, and the Cerrillos-San Bernardo sector.

The deterioration can be noted in the decreased visibility of the horizon, the increasing turbidity of the air, caused by the action of the polluting gases, and the variation in rainfall, Professor Bravo Fuentes explained.

Results Obtained

In the studies of Quinta Normal (1979), relevant environmental deterioration was noted, a condition which has been occurring since about 1945. "The presence of a dirty cloud is the best index," the researcher stressed.

Out of the total rainfall observed (1968-1979), 604.3 mm more occurred in Quinta Normal than in Pudahuel. In the same period, 1481 mm more was recorded in Las Condes than in Quinta Normal, and 1951.5 mm more than in Pudahuel.

The rates obtained, which make it possible to confirm an increase in precipitation from the valley to the Andes foothills, may be because of the

"block" brought about by the abrupt terrain of the cordillera of the central Andes, which results in greater sunshine, brightness, dispersion of the pollutants, and the breaking up of the thermal inversion layer.

Temperature Increases

In measurements made at the Los Cerrillos observatory, it was determined that a discernible increase in temperature has been occurring since 1977, between 1.2 degrees Centigrade and 1.1 degrees Centigrade during the period 1976 and 1997 [sic].

These changes may have their origin in increased pollution, greater density of the dirty cloud, reduction of the natural soil area, industrialization, population increase, and increased numbers of cars, according to the professor.

In addition, in the El Bosque district, a temperature increase of 0.0-1.1 degrees Centigrade was noted during the same period.

8587

CSO: 5000/2094

MARINE POLLUTION THREATENS DAILY LIFE

Cairo AL-SIYASI in Arabic No 842 28 Mar 82 p 2

[Article: "Marine Pollution: A New Danger Threatens Our Lives"]

[Text] Environmental pollution has now become one of the most serious problems facing the world because of the enormous industrial progress which controls all areas of life. Recently, however, a new type of pollution has appeared which affects aquatic life. It is known as "marine pollution."

Egypt possesses one of the largest aquatic environments, since it overlooks the Red Sea and the Mediterranean Sea, in addition to the Nile River. The question is: Is there a marine pollution problem in Egypt? What steps should we take to eliminate this pollution?

Dr Ahmad al-Rifa'i Bayyumi (Director of the Marine Sciences Institute in the Academy of Scientific Research) says that we must now start paying attention to the great danger which threatens us as a result of pollution of every aspect of Egypt's environment since all of these are interconnected. The Nile River flows into the Mediterranean, for example. Moreover, the Egyptian aquatic environment is surrounded by a belt of cities, desert and agricultural land, factories, and other concomitants of life. This belt which surrounds the environment is often the cause of pollution.

Pollution With Insecticides

Agricultural insecticides are often a cause of pollution of the aquatic environment, especially through irrigation and drainage, since the fields send the excess water into the drainage canals. These drainage canals converge to pour out into lakes and then into the sea. The effect of agricultural insecticides is gradually transferred until it finally reaches the sea. This has serious effects on living beings.

Pollution Through Waste Materials

Similarly--and as is well known--all industries produce waste materials, but Egypt does not yet have a system for making use of these residues rather than throwing them into the aquatic environment, either into the Nile River or into the sea. There are several countries in Europe which use the wastes of these industries after treating them by multi-phased scientific methods.

There is another type of waste which is known as human waste. Egyptians generally throw their human waste into the water. By way of example, Cairo deposits its waste materials into the Bahr al-Baqar drainage canal which in turn flows into al-Manzalah Lake. It then goes on to the Mediterranean Sea. This goes on despite the fact that Europe uses scientific sedimentation processes on the waste materials so that they can be used as organic fertilizer in agriculture. Moreover, Egypt is facing the problem of solid waste in the form of junked vehicles, truck chassis parts, and so forth.

Oil Pollution

In addition, oil pollution has become one of the most serious types of pollution. This comes as a result of oil exploration and discovery operations as well as from production, extraction and transportation via pipeline or by super-tankers. Oil tankers in Egypt have had adverse effects in polluting the waters of the Red and Mediterranean Seas and other bodies of waters. These tankers also leave dangerous wastes themselves in the Red Sea. The government must be alert to enact legislation which will put a stop to this type of pollution.

How Shall We Treat Pollution?

The director of the Marine Sciences Institute believes that the beginning of the process of eliminating pollution lies in the spread of a consciousness among the Egyptian public to familiarize them with cleansing processes which must be put into general use. Moreover, the government must provide the public with the means of eliminating wastes in a scientific manner.

As for marine pollution, the state must immediately enact laws to prevent this pollution so that the problem does not get to the point where we cannot do anything about it at all. This in turn would affect our lives and our health.

6945

CSO: 5000/5014

HYDROELECTRIC PLANT PLANNED NORTH OF LAKE TIBERIAS

Tel Aviv HA'ARETZ in Hebrew 5 Mar 82 p 17

[Article by 'Eli 'Ei'ad: "More Electricity--Less Jordan"]

[Text] The electric company's program for the establishment of a hydroelectric station north of Lake Tiberias, by deflecting most of the water flow from the natural channel of the Jordan at Gesher Bnot Yaaqov, moving it by canal to the 'Almagor ridge and having it drop from there in order to exploit the difference in altitude to generate electricity--by allowing a residual flow in the natural channel--places in danger of extinction the last portion in which the Jordan produces fresh water flow.

The hydroelectric station program north of Lake Tiberias was already brought up more than 5 years ago, and since then, largely through inertia, has been treated lazily and with very many hesitations. Of late, the National Council for Planning and Construction decided to give the green light to the electric company to start the detailed planning phase for the station. This decision means the granting of conditional authorization for the program and the creation of a situation in which it will become more difficult in the future for the national council, which is the country's highest planning authority, to retreat. This, both because an explicit plan involves additional expense and because the question would then be asked, why didn't the national council scrap the program--as, apparently, it should have done.

The idea of using waters of the Jordan north of Lake Tiberias to generate electricity was considered in the early fifties, in the framework of the National Water Carrier which was based on deflecting the waters of the Jordan by Gesher Bnot Yaaqov. The idea was not implemented then because of political reasons. The current program, intended to exploit the difference in altitude of about 250m between the height of the water flow in the natural channel of the Jordan adjacent to Gesher Bnot Yaaqov and the level of Lake Tiberias, is based on a canal of about 11 km in length to be built according to a plan prepared in 1958 for the National Water Carrier canal. The intent is to make use of a part of the plan prepared then which is still worthwhile now, in the device to deflect the water to the canal, which was built then in the vicinity of Gesher Bnot Yaaqov.

Apart from the processing areas of Moshav Almagor, the electric company is preparing to build a large control pool for the collection of about 1.6 million cubic meters of water. From the pool, the collected water is to fall, through a pressurized pipe that will be dug into the ground and that will have a diameter of about 4m and a length of 1.2km to the power station which will be built alongside the Jordan channel and at a distance of about 2km from its discharge. This station will include two 50 megawatt turbines that will be dug into the ground so that only their tops will stick out above the surface. The initial design of the Almagor plant spoke of dropping the waters of the Jordan to a station that would be situated on the edge of Lake Tiberias. The present plan does not harm the shore of the lake.

A Winter Station

The hydroelectric station plan north of Lake Tiberias is conditional mainly upon the weather. In rainy years and in seasons in which the Jordan's flow is high--in the winter and spring--it would operate during the hours of peak electrical demand at full power of 100 megawatts. The intent is to exploit the station mainly outside the low hours of electrical consumption, which are mainly the nighttime hours, during which time the water would be collected in the control pool near the entrance to the pressurized pipe. The water would fall through the pipe from a height of about 50m above sea level to about 200m below sea level. As a yearly average, the station would generate, according to the electric company's statistics, about 30 megawatts of electricity a day.

The maximum transport capacity of the deflecting canal is 30 cubic m of water per second (about 30 mcm--million cubic meters--per month), and therefore, according to the statistics, the proportion of water available to the amount expected (according to multi-year averages) at the deflecting point, would yield a surplus of water (88mcm permonth) during February and March, while the low months would be July (9 mcm), August and September. Thus the final expectation, based on these data, is that during six months of the year the deflecting canal would operate at less than half of its full capacity. It should be noted that in 30 percent of all years, there is no flow at all in the northern channel of the Jordan during July, and the statistics are based on a multi-year average.

One of the qualitative points in the debate--apart from opposition in principle to implementation of the project--is the quantity of residual water that will continue to flow in the natural channel of the Jordan. The electric company talks about 5mcm per year as the minimum required for the channel, while, for example, the nature preserve service argues for a minimum of 5mcm [the quantity is somewhat unclear since the abbreviation standard established by the author for million cubic meters is not followed here and in the previous citation two or three lines above] in the hot months of the year and a larger amount, according to a table that it worked up, in the other months.

The official in charge of hydroelectric projects at the electric company, Dr Dan Wiener, says: "the goal is not to dry up all flora in the Jordan channel north of Lake Tiberias. The company intends to operate the station while

strictly preventing any harm in the natural channel of the Jordan and maintaining the existence of plant life along the channel. The station, Dr Wiener continues, "is the first economic step towards significant fuel saving based on Israeli sources of energy. Its advantage is that it will supply clean energy which can be collected and exploited during peak hours of consumption." Dr Wiener notes that the investment in setting up the station is estimated at about \$105 million, and the company estimates that within 8 years that investment will be amortized, while the operation of the station, which does not consume fuel, will save about \$15 million per year.

"Death for the Jordan"

The society for the preservation of nature, along with the nature preserve authority are adamantly opposed to the electric company's program for setting up the hydroelectric station. In a discussion at the national council, the chairman of the society for the preservation of nature, Mr 'Azaria 'Alon, said that "the project should be cancelled, and it should not be allowed to reach any level of real discussion. This plant is of minor importance from the point of view of its output, but its damage is sure. It is the pet project of someone in the electric company. The problem is not the quantity of water that will reach Lake Tiberias and its quality, but how precious it is to this entire region--the whole narrow valley between the edges of the Galilee and the edges of the Golan and the Jordan which flows through it. It means destruction of the environment--and then either the plant will exist only marginally, or water will flow through the Jordan and the plant will suffer large losses, or both will happen together: the Jordan will have insufficient water and the plant will suffer large losses. When it becomes clear that the plant is not necessary, all that will be left will be the destruction of the environment."

The deputy director of the nature preserve authority, Mr Dan Perry, says that the preserve authority opposes the establishment of the plant because it will be impossible to simultaneously maintain the economic viability of the plant and the Jordan as a living river. The establishment of the hydroelectric station means that in certain seasons of the year, especially in the spring and fall when the current flow decreases, not to speak about the summer, the plant would be a calamity for the Jordan. Given Israeli reality, it is clear that the economic project is what will win out, says Mr Perry. We are afraid, he says, that when a white elephant situation is created, the economic consideration will be decisive, which is why the nature preserve authority opposes the creation of a conflict of interests. The victory of the economic project will bring about the death of the Jordan.

The deputy director of the nature preserve authority continues: the people of Israel must remember that we are dealing with the last section of the Jordan that still remains in its natural state. North of Gesher Bnot Ya'aqov, where formerly the sources of the Jordan gathered in order to create the large current flow of the river, they excavated and led the Jordan current into canals. South of Lake Tiberias they have turned the Jordan into a stinking sewer channel. The only part that remains as the Jordan is this section, from which they now want to deflect the major portion of the current. The

most important thing of all is the value of the Jordan as the Jordan, and the last section has to be left as is.

The claim that the station is important for the generation of electricity in the peak hours is weakened by the consideration that the hydroelectric station is set to be principally a winter and early spring station. It will be possible to use it to supply part of the peak winter demand, but it would not supply the peak summer demands which are no less than those of winter. Furthermore: The positioning of the station at the end of the country's electrical distribution system, close to the pumping system of the national water carrier, was, apparently, intended to increase its indispensability. But precisely in the peak hours of the hydroelectric station's activity, in the winter, the indispensability of water pumping from Lake Tiberias is relatively slight, while during the period in which the carrier is in massive operation, in the summer months, the expected contribution will be next to nothing.

Another matter: toward the end of the eighties when the completion of the 'Almagor station is expected, if it should be approved (the electric company estimates the time frame at about 5 years from the date of approval)--the in place capacity of power stations in Israel will reach 4,500-5,000 megawatts. The 'Almagor station is set to generate an annual average of about 30 megawatts--which means only a fraction of 1 percent.

With all the talk about the importance of monetary and fuel saving (in foreign currency) that will be achieved by the establishment of the 'Almagor station, it is of equal importance that we guarantee for ourselves and coming generations a decent quality of life. The Jordan has always been center stage in the thinking of Zionist philosophers and dreamers of the return to Israel. Many of the songs of yearning for Israel were written about the Jordan, which we have managed in the course of one generation to turn into a historical anachronism. The program for the deflection of the waters of the Jordan threatens its last living section.

Beyond that, we should demand of the electric company that before it tries to implement such a controversial project--that it set its own financial house in order. The electric company's administration and board of directors and the heads of the energy office might be asked about "free energy." We do not refer to those electric company workers whose electricity consumption does not exceed the family average in Israel, but to those who consume two and three times as much and more. Were the management of the electric company (which wants to save fuel at the expense of the Jordan and the entire nation of Israel) to impose a fine on all those kwh which are consumed above the Israeli family average far higher than the cost of the kwh to the consumer, there is no doubt that the amount of electricity consumed freely would decline. Thus there would be a not inconsequential saving, and in hard cash. Additional examples could be provided as to how money could be saved within the electric company itself--before asking the people of Israel to agree to the deflection of the major portion of flow of the last living section of the Jordan.

BRIEFS

DROUGHT CAUSES SHORTAGES--Drought was mainly to blame for shortages this year of dry beans, cotton, lucerne seed, dairy products, wheat and oil seeds, the Minister of Agriculture and Fisheries, Mr Pietie du Plessis said yesterday. In a written reply to a question by Mr Horace van Rensburg (PFP Bryanston), he said other reasons for shortages were reduced cultivation and unfavourable climatic conditions, and aphid plague, and an exceptionally poor 1980/81 wheat crop. Asked what the price implications were, Mr Du Plessis said dry beans would cost more. The price of cotton was linked directly to the world price which was relatively low due to the recession in Western countries. The selling price of locally produced lucerne seed was increased by about 22 percent in March. It was not possible to forecast price implications of possible shortages of dairy products. Wheat prices were in force for a full season and imported wheat would be sold at the same price as local wheat. The anticipated shortage of oil seeds would probably not have a market influence on domestic price levels. [Text] [Johannesburg THE CITIZEN in English 16 Apr 82 p 4]

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ENVIRONMENTAL GROUPS OPPOSE RHINE-MAIN-DANUBE CANAL

Frankfurt/Main FRANKFURTER ALLGEMEINE in German 22 Mar 82 p 5

[Article: "'The Biggest Nature-Destroying Activity Can Still Be Prevented.' Rally of Opponents of the Rhine-Main-Danube Canal/A Proposal: Use It as a Regatta Course"]

[Text] Regensburg, 21 March--Eighteen organizations have teamed up to form a "Nationwide Action Group Against the Rhine-Main-Danube Canal," which held its first "mass rally" in Regensburg. A speaker for the action group admitted that this pact, in which the main participants have been nature and environmental protection associations and two railroad workers' unions, came about rather late. According to information from the Bavarian Economics Ministry--to which, however, no one at Regensburg wanted to refer--37 kilometers of the 99-kilometer-long canal between Nuernberg and Kelheim are ready and 7 kilometers are under construction. Partly faced with a fait accompli, the action group nevertheless believes that there is still an opportunity to prevent "the biggest nature-destroying activity in this country." To date it has collected 235,000 signatures throughout the FRG, and it hopes that the end of the year the figure will be 1 million. However, not even 100 persons came to the announced "mass rally" at the Leerer Beutel [Empty Purse] Inn; this verged on the symbolic because the rented hall made almost as empty an impression as the cash register of the FRG.

All the arguments against completion of the canal were assembled. It was repeatedly explained that the canal would not pay for itself, that quite apart from the very high construction costs, current operating costs were expected to be higher than receipts. Prey, chairman of the Nuernberg Personnel Council of the Federal Railroads, prophesied a "penetration by Eastern Bloc countries through dumping at low prices." Kammer, advisory member of the "Society for Efficient Transportation Policy," predicted an "irruption by the Soviet Danube fleet into the Rhine area," which in the long run could not be prevented even with treaties. The speaker wondered why Prime Minister Strauss, of all people, is a "protagonist of the canal, which is useful only to the Eastern Bloc countries." Weinzierl, chairman of the Nature Protection Association, could not understand the Bavarian prime minister either: Even if the latter has no liking for nature, he is "a good economic expert" and should be against the canal for purely economic reasons.

Sothmann, chairman of the Bavarian Land Association for the Protection of Birds, referred to the area so far only partly destroyed by construction of the canal as a "rest and wintering area almost unique in Bavaria." Certain birds which fly from northern Scandinavia to Africa stay here for a while. Irreplaceable biotopes would be destroyed forever if the groundwater were cut off by a concrete wall from the waters of the Altmuehl and the Danube: when the numerous wet meadows dried up, then the dead arms of the river would disappear.

Kuegel, leader of the citizens' initiative called "Save the Altmuehl Valley," was the only one who dared attempt a reply to the obvious question of what should be done with the part of the canal which had already been built. In a few key words he outlined what is to be done after construction is stopped: "Regatta courses--the sluices remain as a reminder of the insanity of the enterprise--otherwise fill it up and green it over." To the Bavarian government's argument that both it and the Federal Government had obligated themselves contractually to carry out the construction, several speakers countered by referring to two escape clauses relating to the ability to finance and the agreement of the parliaments concerned.

5586

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NONPOLLUTING PROCESS FOR LEAD PRODUCTION DEVELOPED

Frankfurt/Main FRANKFURTER ALLGEMEINE in German 22 Mar 82 p 16

[Article: "Lead Production Need Not Be Deleterious to the Environment. A New Process Has Been Introduced by Berzelius in Duisburg/Economical of Energy and Raw Materials"]

[Text] Berzelius Metallhuettenengesellschaft mbH [Berzelius Nonferrous Metals Smelting Company- Ltd], Duisburg--A completely new process for the production of lead which is economical of raw materials and environmentally benign has been introduced in Duisburg. It can fundamentally change the extraction of lead from primary ores in the future. The new large-scale demonstration plant was built by the Berzelius Nonferrous Metals Smelting Company following the so-called QSL process invented by the scientists Queneau and Schuhmann and developed by Lurgi. The Federal Research Ministry bears DM 21 million of the unusually high costs--totaling about DM 45 million--and 12 million each have been shouldered by the mother firms of Berzelius, Metallgesellschaft AG [Nonferrous Metals Company, Inc.] in Frankfurt and Preussag AG in Hanover. Both firms produce lead from primary ores--the Nonferrous Metals Company in Stolberg, Preussag in Nordenham.

For centuries, primary lead was extracted by a process which, although continually further improved, had always remained a two-step process. In fact, the ore usually had to be roasted first to remove the sulfur. The new process makes possible fully continuous smelting of the lead ores in a closed system in which oxidation and reduction of the ores occur in one process step. This process not only avoids emissions of lead and sulfur dioxide to a large extent but also saves on energy and raw materials. The clearly reduced fuel demand can also be met by means of inexpensive coal dust. Moreover, the high efficiency of the process permits use of lead ores of lower value. Thus, environmental protection and economic efficiency are not opposed to each other when new environmentally benign technologies are developed and introduced into commercial practice, according to Erwin Stahl, parliamentary state secretary in the Federal Research Ministry, who spoke at the introduction of the new process in Duisburg.

If this demonstration plant should prove out, German primary lead production could soon be switched over to this new process. According to information from Dr Hans Rudolf Wuethrich, member of the board of the Nonferrous Metals

Company who is responsible for the firm's smelters, 200,000 metric tons of lead are produced in the FRG from primary ores at this time.

The world's entire primary lead production at this time is about 3.2 million metric tons, of which almost 1 million metric tons are produced by the Eastern Bloc. In the Western world there are now 20 smelters in operation. In addition, about 1.8 million metric tons of lead are produced from secondary materials and 0.2 million metric ton of lead is produced from mixed ores in the Western world. The recovery rate of 80 percent for lead is particularly high [in comparison with other metals].

All of the world's lead producers are supposed to have been in Duisburg already, according to Wuethrich. The new process will, however, be offered only after successful completion of the large-scale test. Agreements on an exchange of experience are already in existence at this time, however. A second modern process has been developed in the Soviet Union. This so-called "Kivzet" process is also being investigated at this time by a number of international firms.

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GOVERNMENT TRYING TO PROTECT VULNERABLE SVALBARD ECOLOGY

Oslo A-MAGASINET (Supplement to AFTENPOSTEN) in Norwegian 17 Apr 82 pp 6-10

[Article by Georg Parmann: "Vulnerable Nature in One of the World's Last Wildernesses"]

[Text] We went along with Asbjørn Børset, consultant on environmental protection, across the tundra in the Bjørndal, some kilometers south of Longyear City. It is one of the richest areas in flora in Svalbard. Even so, the vegetation is sparse. The highest plants only manage to rise a few centimeters above the surface of the hill. But the array of blossoms is striking. Svalbard poppies and reindeer flowers grow in small clusters, interspersed with a number of species of saxifrage and arctic buttercups. A little flock of Svalbard reindeer are grazing quietly by the mouth of a glacial stream. Flocks of little auks lift themselves on their wings up into the precipitous mountain slopes.

We were on the way to look at a wheel track. Børset discovered it some years ago. A tractor had made it in connection with the search for oil in the area.

"Why is a wheel track on the tundra interesting?"

"Well, it can say more than a great many words about how special the environmental protection problems are in the area around 80° north latitude; in the worst case a wheel track remains as an everlasting reminder or may even change the character of the landscape entirely," Børset says.

Permafrost is one of the phenomena that create a vulnerable nature. It is an eternal frost down to several hundred meters deep. Every summer the topmost layer thaws, perhaps to a depth of 40 or 50 centimeter. It is here that life processes take place. But if the stratum that is thin in the summer is exposed to external forces, it may begin to slide on the substratum that is frozen hard.

The extreme conditions for plant growth and life processes generally in the earth's crust are also of importance to the protection of nature on Svalbard. The summer is short and hectic. The temperature seldom rises more than a few degrees above zero centigrade, but on the other hand the sun shines all round the clock during the 3 months of summer. The extreme conditions make the vegetation especially vulnerable. It is not to be taken for granted that one can

sow in an area that has plant cover and get something to grow. Where the vegetation has once been removed, it may take 10 years before it comes back again naturally--if it comes back at all, says our local expert.

We finally arrived at the rut. Even Børset, who is now in his second year as environmental protection consultant in Svalbard, was surprised at the sight that met our eyes. What a few years before had looked like an innocent rut across the tundra had changed in some places to ravines meters deep.

The surface water had found its way to the rut after a rain. The tracks were cut deeper. Next time it rained more water found its way to that course. The process appeared to have gone faster and faster, and soon the water had cut its way all the way down to the permafrost. Loose masses and plant cover were carried along with each new shower of rain. The open sore will probably never heal with nature's own help. A new landscape has been created by what at first might look like an innocent tractor track.

Against this background it is perhaps easier to understand some of the other environmental protection problems in Svalbard, such, for example, as that 500 or 600 tourists in the 62,000 km² archipelago may represent a threat to nature, or that the garbage and pollution from the population of 3,000 to 4,000 may be a problem.

The authorities in Svalbard are afraid of an increased number of tourists in the island group. Today there are three types of tourists that come to Svalbard. There are cruise tourists, who come either on big cruise ships or by the Hurtigrute [steamships plying the Norwegian coast; fast boats with few calls]. As a rule the passengers are on shore only a few hours at one or two places in Svalbard, and do not represent any great problem in connection with nature protection. Another group consists of those who come as visitors to settlers in Longyear City and the other communities in Svalbard. The lodging facilities are so poor, however, that this type of traffic is minimal at present. The third type of tourists are those who come in groups of varying size to live in tents in Svalbard for varying lengths of time.

In 1981 only something more than 500 tourists came in the last-mentioned way. But they are better and better equipped, so that for one thing they have greater possibilities of moving about than before. Rubber boats, canoes, and even seaplanes are brought to Svalbard by tourists who want to experience the Arctic. Most of them pitch their tents at "camp sites" that are temporarily rigged up close to the airport in Longyear City and take one-day trips from that starting point. Some also take tents and equipment with them into the interior, to the lonelier areas in the archipelago.

The authorities in Svalbard are cautious about saying that this form of tourism is an environmental protection problem, but do not conceal the fact that it can quickly become one. In addition to the wear and tear on the vulnerable nature, it is primarily the problem of garbage and trash that can become noticeable.

"Because of the climatic conditions garbage is not broken down in the same way as we are accustomed to on the continent. Trash can remain lying there for

years as a disfiguring calling card in nature, or may perhaps become a direct danger to animal life," Børset explains.

"There are no ordinary provisioning facilities for tourists in Svalbard. That means that all food and other supplies must be brought in with them from the continent. With our modern packaging of foodstuffs there is inevitably a lot of trash left over, and the tourists are not very careful to put it in a safe place or carry it back to the continent."

But it is not only the tourists, of course, that litter Svalbard with trash. The local population does that to a certain extent, too, perhaps chiefly in connection with mining or other economic activity.

In Longyear City and around the various mining areas there is still a great deal of junk and trash. There may be rails and wooden superstructures from abandoned mines that will now slowly but surely be destroyed by the ravages of time. In some cases there may be a question here whether it is an environmental protection task or a cultural mission to clean up.

"There has been a lot of discussion about what we shall do with the architectural relics of the old mine entrances. When I suggested the possibility of getting them broken up into 'scrap' and burning that, I got many adverse reactions. Many think it is proper to let the ravages of time and nature itself take care of the mining area. In spite of everything there is a great deal of history preserved here," says Ingvald Ohm, director of the Great Norwegian Spitsbergen Coal Company.

[Question] But then is it not a task for the company to restore the old mining area?

[Answer] That would be an almost hopeless and insuperable task both practically and economically, so that the question, unfortunately, hardly arises.

[Question] What is the company doing to clear away the junk and trash?

[Answer] For the last 3 years we have been carrying out a systematic cleanup program, and we will continue with that. It is costing us between 200,000 and 400,000 kroner a year, but we realize that we have not yet done enough. In the case of new installations, by the way, we are paying far more attention to the environmental protection side, and we do not abandon a mine now without a proper cleanup being done.

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The motorized traffic in Svalbard can also be a threat to nature. The automobile stock of a few hundred cars--none privately owned--does not represent any problem. There are not many kilometers of road in Svalbard, either. Environmental protection consultant Børset does not wish to say that the snow scooter traffic is a serious problem, either.

"When the Svalbard population uses that means of transport, the ground is frozen and covered with snow. The plant cover is thus not damaged. Animal life is also scanty at that time of the year, and hardly suffers especially because of the snow scooters.

"All the same, it cannot be entirely unproblematical for the scanty animal life when hundreds of snow scooters are running over the open country in the polar night. But without the snow scooters, everyday life for the inhabitants of Longyear City would be completely altered, and more restrictions on this form of outdoor life would hardly be popular," Børset says.

The new mopeds with small wheels may turn out to be a new problem. They have a lot in common with small cross-country motorcycles, and can operate away from the developed roads. That is prohibited, but some do let themselves be tempted and ride over the tundra on their little two-wheelers. And if there is anything the tundra in Svalbard cannot stand, it is cross-country riding. But so far there are only a few dozen of these vehicles here. On the other hand, their popularity is rapidly increasing.

The authorities have long been aware of how vulnerable the Svalbard environment is, and hence also of the need for special protective regulations. For 50 years there has been discussion of various forms of conservation measures for the archipelago. It was not until 1973 that national parks were established, and now more than half the area of the archipelago is a protected area in the meaning of the environmental protection act.

The three national parks are: South Spitsbergen National Park, Foreland National Park, and Northwest Spitsbergen National Park. These cover the south, west, and north ends of western Spitsbergen respectively. Toward the east there are also two large nature reservations, where restrictions on traffic and other activity are still stricter than in the national parks. They are the Southeast Svalbard Nature Reservation and the Northeast Svalbard Nature Reservation.

Besides these five big protected areas, fifteen bird preserves and two big plant protection areas have been established. Altogether, the protected areas of Svalbard amount to more than 30,000 km², or over half of the land area. A considerable part of the protected area, however, is covered by perpetual ice.

The polar regions have long since been conquered, so that nobody should be tempted any longer to, e.g., Svalbard for a pioneering effort and heroism. The challenge offered by Svalbard is of a different nature. Large parts of the archipelago are today a part of one of the world's last remaining wildernesses. Man is now on the point of invading it.

If Norway, as administrator of that wilderness, is to succeed in maintaining the valuable natural qualities and the delicate ecological balance in the area, it will take a considerable investment and effort for environmental protection for years to come.

Storting Report on Environmental Protection in the Arctic

It is the Ministry of Environmental Affairs that has the highest responsibility for protection of nature, protection of civilization, map-making, combating pollution, and hunting and fishing in Svalbard--along with the responsibility for polar exploration. The ministry is now working on a report to the Storting that will cover these matters in the polar regions and is aiming at

completion by the summer vacation. This will form a new basis for discussions on environmental protection policy in Svalbard. But even now clear objectives can be set for that work:

"Fortunately, there is broad agreement that the natural conditions in the Arctic demand special protective measures. Both nationally and internationally Norway has assumed responsibility for maintaining and furthering a viable natural environment in Svalbard, partly through the Svalbard treaty," says Erik Lykke, department head in the Ministry of Environmental Affairs.

"Decisions on development and economic activity must therefore be based on solid knowledge of the conditions and considerations that must be taken into account on the basis of the natural conditions. We should gather a 'storehouse' of such knowledge. Today the data base is spread over many agencies and in some respects is too poor.

"We will be constantly faced with a divergence between protection considerations and economic activity. It will be to the advantage of all parties for us to have a readily accessible and as solid as possible basis in knowledge for the decisions that must be reached, partly so that individual cases can be quickly decided. These are problems that will be discussed in the new report to the Storting," says Lykke.

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